



ABERDEEN TEST CENTER

THE POINT POSITION

Celebrating 100 Years of Testing Excellence, 1917 - 2017



U.S. Army Aberdeen Test Center, APG, Maryland

Volume 2, Number 3, July 2017



Culminating 100 Years of Testing

COL Morris L. Bodrick
Commander, U.S. Army
Aberdeen Test Center

I want to thank everyone who made the two-day Centennial Live Fire event a resounding success! It was wonderful to see the smiles on everyone's faces as we celebrated the past 100 years of the U.S. Army Aberdeen Test Center (ATC). I am glad we could give our local community the opportunity to see the amazing work we do each day to keep our servicemen and women safe. I met many of the families who support our employees every day, and the many community members who came out to celebrate the value of Aberdeen Proving Ground (APG). The live fire events were a great experience, and a rare occasion when our families gain access "behind the fence." Great work by all!

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75 Years of Progress: From Jeep to JLTV

Approved for public release; distribution is unlimited.

Photo by Steven Lowther

Michael J. Babinchak

Acting Chief, Tactical Vehicles Division,
Automotive Directorate

ATC provides the best testing for the latest in light tactical vehicles.

As the U.S. Army Aberdeen Test Center (ATC) celebrates Aberdeen Proving Ground's (APG's) 100th year of excellence in testing, it is natural to reflect upon the many vehicles that have come through APG's gates and been tested in an effort to provide the best equipment to U.S. military personnel. Throughout the years, one constant has been the military's need

for a useful, dependable, mobile light tactical vehicle. Several wheeled-vehicle platforms were tested at APG before the 1940s, but the Willys Jeep was the first significant four-wheeled light tactical vehicle to serve the Army's requirements. Initially developed and produced during World War II, the Jeep evolved through the next four decades until the U.S. military transitioned to a new tactical concept in the late 1970s, and the High-Mobility Multipurpose Wheeled Vehicle (Humvee) program began. Over the last 30 years, the Humvee has

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The Willys M38A1 Jeep, introduced to the U.S. Army in 1952, is shown undergoing testing at APG.



A Humvee traverses the 30-percent side slope at the Munson Test Area at ATC.

Dive Operations at ATC

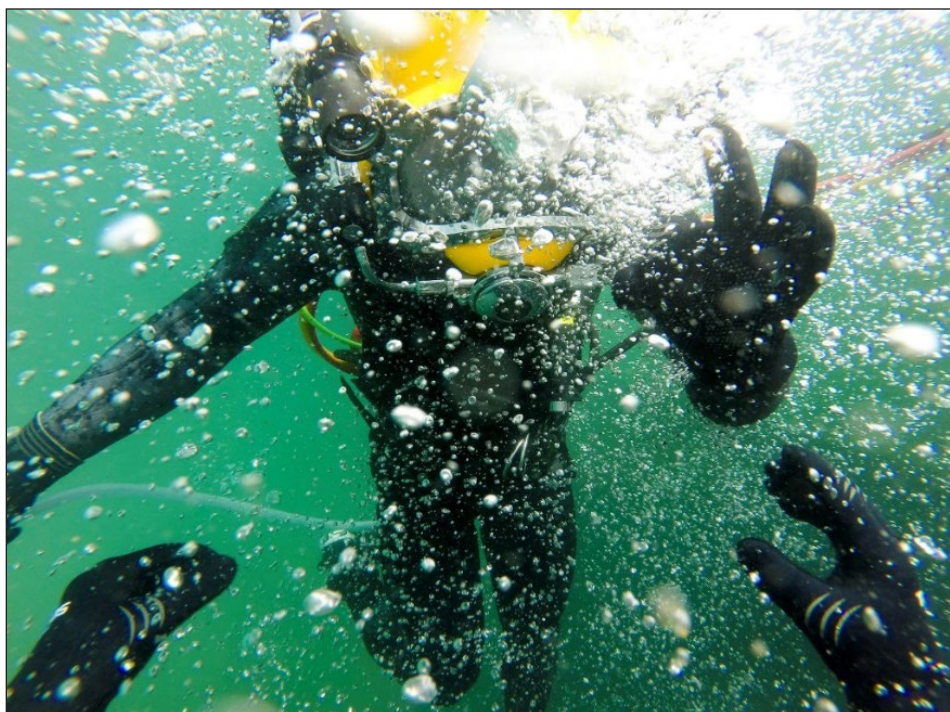
SFC Jerry R. Szymczyk

Dive Operations, Non-Commissioned Officer in Charge, Range Planning and Range Control Branch, Plans & Operations Directorate

On land, in the air and underwater, ATC sets the highest standard of excellence in progressive military test support.

Many ATC test activities are high-profile, inside and outside of the installation. Inside the gates, the rumbling of moving tanks and the dust from automotive test tracks are part of daily life. Outside, helicopter flights, loud booms and vibrations are conspicuous to the surrounding communities. Less evident is ATC's one-of-a-kind underwater test environment to support amphibious and underwater test and training missions.

Underwater operations require extensive knowledge and training on the part of divers, as well as highly specialized equipment. The U.S. Army and Navy invest significant money and man-hours to ensure their divers are proficient and have the best equipment available.



A diver uses surface-supplied air to breathe at ATC's Underwater Test Facility.

ATC is supported by military dive units in its amphibious and underwater test missions. In turn, it provides a unique training locale for military divers. This perfect match means testing is executed properly and military divers are appropriately trained. Normally, U.S. Navy (USN) diving units train in the Bahamas or at other locations that require considerable funding for personnel to travel and work off-site, as well as for facility rental. Training

at ATC carries no facility charges and is much closer to the divers' duty station, which results in significant cost savings to the USN. In addition, an ATC Dive Liaison Officer (DLO) remains with the units at all times to assist and maintain contact with ATC Range Control and APG Emergency Medical Services.

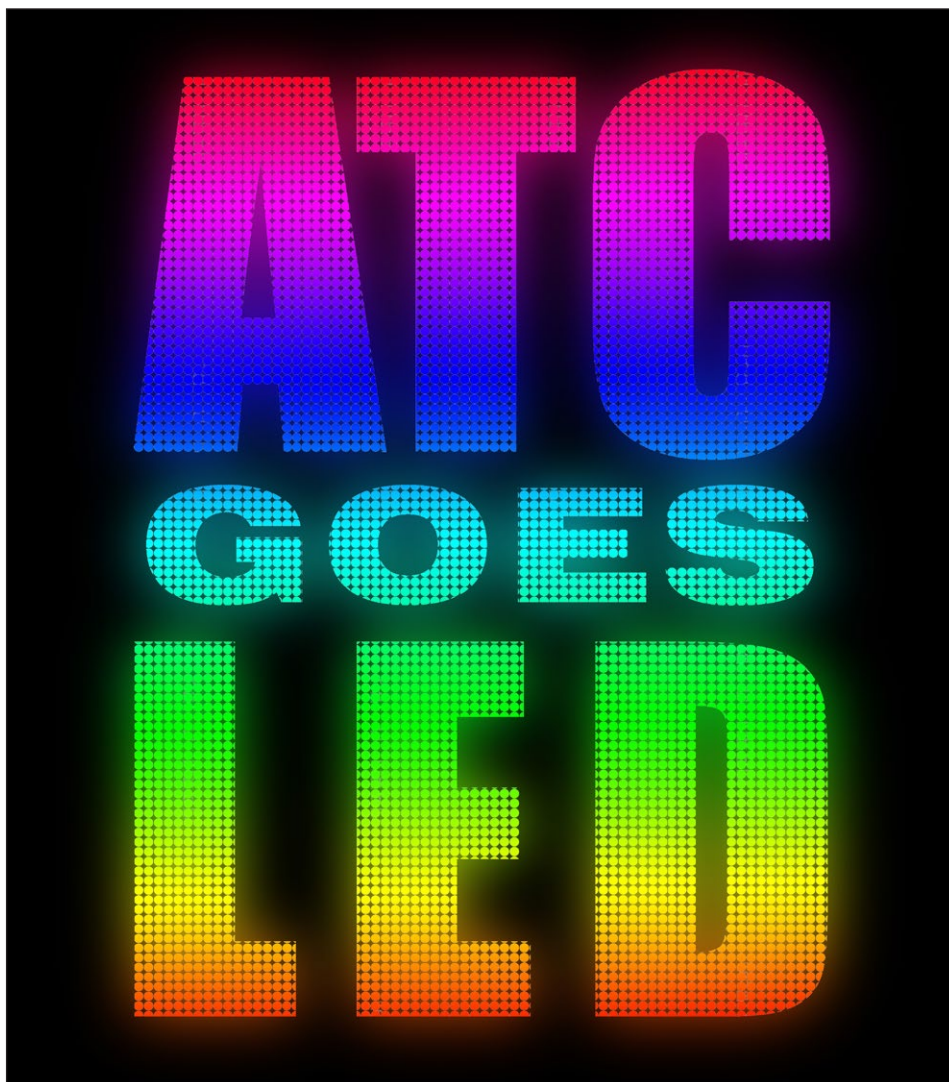
In support of ATC underwater testing, the USN Mobile Diving and Salvage Unit Two inspected the ATC Underwater Test Facility (UTF) Marine Railway, which is used to deploy large items for testing and to recover the items after testing is completed. The divers used surface-supplied air to inspect the structure underwater for damage, degradation and debris obstruction that could create issues during deployment or recovery of test items. The divers also performed underwater maintenance on the Marine Railway; if done on land, it would have taken longer and been more expensive.

In turn, the USN requested the use of ATC's Littoral Warfare Environment to perform a Federal Bureau of Investigation Underwater Post Blast exercise to train USN explosive ordnance



Participants sort and examine post-blast debris at UTF.

See *DIVE*, page 11



Gene Fabian

Environmental Engineer, Threat Detection and System Survivability Branch, Maritime/Threat Detection and System Survivability Division, Survivability/Lethality Directorate

1,000 hours = average life of incandescent.

10,000 hours = average life of fluorescent.

50,000 hours = average life of LED.

100,000 hours = potential life of modern industrial LED.

How can going greener mean going less green? Literally, by switching from old fluorescent lighting, with its greenish tint, to modern light-emitting diode (LED) lighting. With the steady increase

in quality and decrease in cost of LED lighting since the mid-2000s, it is hard for anyone to remain in the dark about LED benefits, and ATC is no exception.

Compared with other bulb types, LEDs use much less electricity, last much longer, resist shock and vibration, contain no mercury, operate well in extreme cold and produce very little heat and no ultraviolet or infrared rays.

ATC is supporting energy conservation and waste reduction by replacing its fluorescent bulbs with LED lights as part of a study funded by the U.S. Army Environmental Command. The fluorescent bulbs currently used contain mercury and require disposal in hazardous waste landfills. LED lights contain no haz-

ardous material, can be disposed of as general waste and may potentially be recycled. They last much longer than fluorescent bulbs, meaning fewer replacements and lower maintenance costs.

Nine facilities at ATC were recently converted from fluorescent lamps to LED technology. During the conversion, 84 fixtures and 238 fluorescent lamps were removed and replaced with a combination of LED luminaires and LED retrofit conversion kits. Many of the old fluorescent fixtures that were originally designed with four 32-watt bulbs in each fixture (128 watts total) were replaced with one 32- or 40-watt LED lighting system.

All of the LED designs that were selected and installed comply with the Restriction of the Use of Hazardous Substances. All are designated as Design Lights Consortium Qualified Products; that is, testing has determined these products to be high-quality, energy-efficient commercial lighting systems. Personnel feedback from ATC facilities with upgraded lighting has been that the light quality is brighter, more uniform and more aesthetically pleasing.

According to energy.gov, "Switching entirely to LED lights over the next two decades could save the U.S. \$250 billion in energy costs, reduce electricity consumption for lighting by nearly 50 percent and avoid 1,800 million metric tons of carbon emissions." The Department of Defense is committed to a culture of Net Zero Energy and Waste that uses sustainable practices to implement energy conservation and waste reduction actions on military installations. ATC's going LED is one example of the ongoing effort.



The Analytical Branch team; back row (left to right): Estevan Estrada, Mark Payne, Matthew O'Connell, Lenny Lombardo, Ward Boughers, Brent Beauchamp; front row (left to right): Jenna Preston, Amanda Hughes, Barbara Gillich; not shown: Andrew D'Onofrio.

Gaining Insight Through Analysis

The Analytical Branch, RAM/ILS Engineering and Analysis Division, Automotive Directorate

"The coming century is surely the century of data." --David L. Donoho, Professor of Statistics, Stanford University (2000)

Each day, the many subordinate operations within ATC quietly fulfill their specialized missions that, altogether, make ATC a premier test center. Throughout 2016, one of these operations, the Analytical Branch of the Reliability, Availability, Maintainability (RAM)/Integrated Logistics Support (ILS) Engineering and Analysis Division, Automotive Directorate, provided mathematical/statistical analysis support to the Automotive, Firepower, Survivability/Lethality, and Warfighter Directorates as well as to Command senior leadership. The Analytical Branch worked on more than 100 projects, producing

more than 100 technical reports. They also performed real-time monitoring of body armor testing, validating more than 44,100 shots in four commodity areas.

Notable test programs supported by the Analytical Branch in 2016 include Paladin, Stryker, Heavy Equipment Transporter Urban Survivability Kit, U.S. Marine Corps Cougar and PUMA M36, for which the analysts performed crew survivability analysis and examined the function and effect of automatic fire extinguishing systems. The team provided exterior and terminal ballistics analysis for programs such as the Modular Handgun, 40-mm M918E1 and 40-mm M781E1, as well as for all body armor tested at the Light Armor Range Complex. They also performed statistical validation of the new D4D data acquisition system.

The Analytical Branch has worked with the Director for Operational Test and Evaluation in developing some of the statistical methods used in helmet testing. The branch has pioneered innovative solutions and methodologies such as validating a newly developed

yaw measurement system using a laser scanner technique, and implementing the Neyer method for V50 testing for body armor. Of special note was the submission of the Small Business Innovative Research topic, Human Skin Simulant for Ballistic Testing. A human skin simulant is needed to test for skin penetration by non-lethal projectiles, such as those used in close-combat training exercises.

Currently, the branch actively supports 41 test projects. The team's work ranges from physics-based analysis (vehicle dynamics, aero-ballistic characterization of projectile flight, etc.) to statistical analysis (projectile accuracy, dispersion characterization, etc.) to arena fragmentation analysis (weight/velocity) to blast overpressure and heat flux analysis. During the planning, execution and reporting phases of the test projects, branch analysts work closely with test officers to ensure that statistically valid data are obtained and that accurate, sound analyses are generated. This is critical to getting safe equipment of the utmost quality to our military personnel.

Safety Awareness Week (SAW): ATC's Safety Office Puts the Teeth in It

Al Horn

Safety Specialist, Safety Process Improvement Division, Safety and Occupational Health Office

Put teeth in - to establish or increase the effectiveness of.

--Dictionary.com

One fundamental and critical resource has maintained excellence in testing at the U.S. Army Aberdeen Test Center (ATC) over the past 100 years – people.

The three pillars of ATC – Safety, Accountability, Wellness – ensure that the safety of our Soldiers, civilians and contractors before, during and after the workday remains a primary goal of the ATC Safety Program. The ATC Safety and Occupational Health (SOH) Office works nonstop to implement a variety of safety and training efforts to make safety an attainable goal for all.

One such initiative was the second annual Safety Awareness Week (SAW). To maximize participation, SAW provided personnel a diverse selection of classes and training programs at various locations throughout ATC, focusing on both on-duty and off-duty topics. With courses such as Industrial Ergonomics, Desk-Side Stretching, Gun Safety at Home, and Radon Awareness, the lineup provided something for everyone. The week



George Trenkle, ATSS safety officer, gives a presentation on pinch points.

culminated with an event at the Automotive Technology Evaluation Facility that included a Throwback Bike/Walk/Run,



Participants in the ATC Bike/Run/Walk event held at ATEF gather during Safety Awareness Week.

organized by the ATC Fit Program, as well as a fire extinguisher demonstration and displays on weapons, grilling safety and tick awareness. More than 300 participants took part in SAW, and their reactions were overwhelmingly positive.

While SAW might be the most publicized safety initiative of the year, it is not the SOH Office's only safety endeavor. Daily duties include inspecting work-places, writing and reviewing Standard Operating Procedures, participating in Hazard Analysis Working Groups, conducting surveys and permit inspections, investigating accidents and organizing more fun and enlightening safety programs.

An upcoming event, planned for September, is the second annual Safe Driving Rodeo. With a focus on safely navigating vehicles around ATC, the rodeo will have practical, participatory and competitive activities for all participants to enjoy. One of the central activities of the 2016 rodeo was the competitive obstacle course, for which a Firepower Directorate team took home

the coveted Golden Steering Wheel for their superior skills in performing preventive maintenance checks, demon-

strating ground guiding and working as a team. Along with SAW, the goal for the Safe Driving Rodeo is to be bigger and better each year.



Bryan Gibbons and James Johnson won the 2016 Safe Driving Rodeo.

At ATC, we understand that safe testing is not always easy, but it is critical. Safety largely depends on people stopping to think before performing tasks that can be hazardous but are nonetheless crucial to ATC's mission. Through its constant endeavors toward increasingly effective processes, training and programs, the SOH Office keeps everyone at ATC sharp when it comes to safety.

12,000 Gather to Celebrate APG Centennial



Guests were greeted by this banner suspended between two M88A2 Recovery Vehicles.



ATC Retiree Joe Ondek manned the History booth dressed in authentic WWI regalia.



COL Bodrick and Wayne Strine, Combat Vehicles Division Chief, honor Mr. Wally Mueller, Vietnam veteran.



ATEC Commander MG John Charlton addresses the crowd before the live fire display.



Ask dad, he knows. Attendees enjoy the informative static displays.



Kids check out the view from the back of a Stryker.



A Blackhawk helicopter makes a surprise appearance above the crowd.



Thunder from an M1A2 Abrams Main Battle Tank rocked the audience to their core. The live fire display ended with an all-weapons firing finale.



Visitors get a close-up view of an M1A2 tank. Static displays included vehicles, small arms, body armor and hands-on exhibits. Subject Matter Experts (SMEs) were available for guidance.



Both children and adults enjoyed the opportunity to try on the latest body armor.



An M109 Paladin takes center stage while other vehicles queue up behind.



Some of the estimated 12,000 attendees seated at the Main Front in anticipation of the live fire display.

The Proof Is in the Pressure

Ralph A. Scutti

Chief, Armaments and Munitions Division, Firepower Directorate

"Proof (n.) - something that induces certainty or establishes validity."

--Merriam-Webster's Collegiate Dictionary, Eleventh Edition

At ATC, 250 to 350 large caliber and mortar weapon systems are proof tested each year.

Since its inception in 1917, Aberdeen Proving Ground (APG) has played a vital role in maintaining the U.S. Army's readiness to accomplish its ongoing mission. The U.S. Army Aberdeen Test Center (ATC) continues that tradition by "proofing" large caliber cannon and mortar systems before they are accepted into the Army inventory.

Proofing is the final quality assurance check in the manufacturing process. After satisfying conformance checks at the manufacturer's facility, cannons, breeches, recoils, muzzle brakes, bipods and baseplates are shipped to ATC for proofing. During proofing, the item being tested is fired at "proof pressure" to determine whether it meets the design standards required to ensure the weapon will not fail or injure the crew during use.

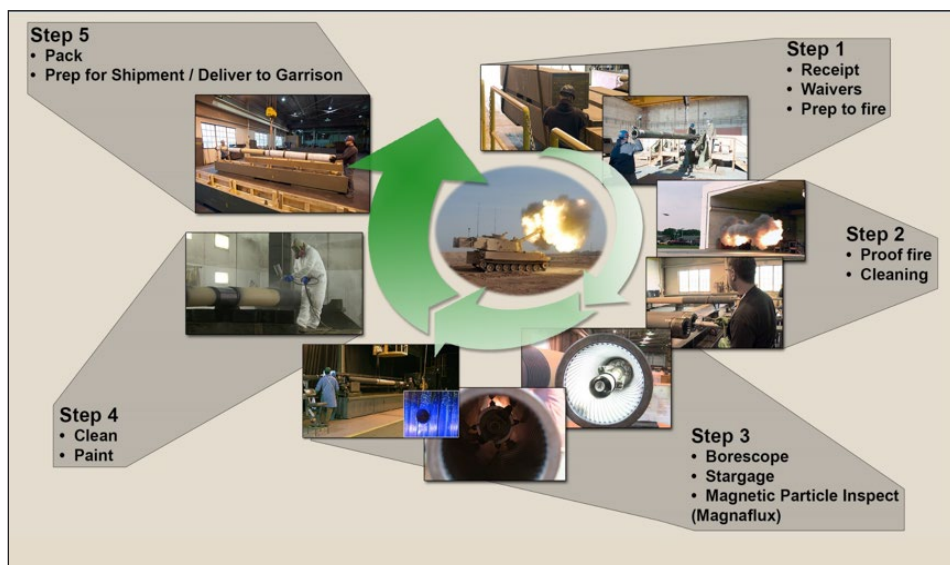
The proof pressure of a weapon is a value, derived statistically, that is greater than the chamber pressure a weapon will typically produce, but less than the chamber pressure that will cause the weapon to fail.

When a shipment of weapons comes to ATC for "proof firing," the weapons are inspected, prepared for firing and proof fired at a range. Chamber pressure is obtained from two copper crusher gauges, which



T-17 copper crusher gauges on a mortar tail.

record the maximum chamber pressure experienced by the weapon during firing. After firing, the weapon undergoes a series of nondestructive tests: visual borescope, material integrity (magnetic particle or eddy current) and physical dimension inspections. After the weapon passes all inspections, it is accepted into the Army inventory.



ATC follows these steps in proof testing.

Excellence Both on and off the Proving Ground



Jeff Damiano (left) competes in the 26-mile Boston Marathon in April 2017.

On 11 February 2017, Jeff Damiano, General Engineer and Armaments and Munitions Test Branch test officer, was inducted into The Honorable Order of Saint Barbara by the Aberdeen Proving Ground Chapter of the U.S. Army Field Artillery Association. The Order of Saint Barbara recognizes individuals who have contributed to the promotion of the Field Artillery, while demonstrating the highest standards of integrity, moral character and professional competence.

Damiano was also recognized as the U.S. Army Test and Evaluation Command (ATEC) employee of the first quarter, fiscal 2015, for his execution of the 155mm M284 cannon proof acceptance test program. His actions in response to a Safety of Use Message deadlining the entire fleet of M109A6 Paladin and M109A5/A6 self-propelled howitzers allowed the Army to exchange condemned cannons for new production cannons.

During his 14 years of service, Damiano has been responsible for the proof acceptance test programs of every 105mm and 155mm artillery weapon component fielded. He has also participated in many developmental test programs that have assessed the potential of engineering improvements and weapon designs.

Outside of ATC, Damiano is a competitive runner, participating in events such as the Steamtown Marathon, held annually in Scranton, Pennsylvania. In April, Damiano competed in the Boston Marathon, placing in the top 11 percent of the field.

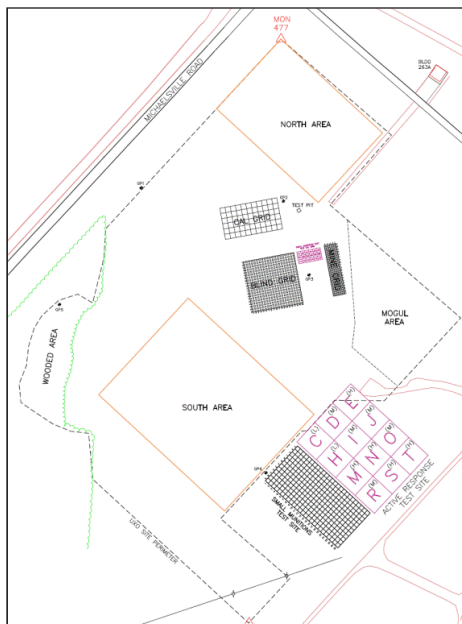
Testing the Testers

Gene Fabian

Environmental Engineer, Threat Detection and System Survivability Branch, Maritime/Threat Detection and System Survivability Division, Survivability/Lethality Directorate

ATC helps find the best unexploded ordnance investigators.

The U.S. Army Aberdeen Test Center's support of the U.S. military means not only testing in preparation for, and during, military actions, but in the case of unexploded ordnance (UXO), follow-through afterward. Inactive domestic military ranges and former munitions testing grounds are known to contain buried UXO that present an enormous public health hazard and could cost billions to clean up. A significant portion of that cost could be



Overhead plot of the UXO Test Site.

saved through UXO removal methods that avoid unnecessary excavation of nonexplosive debris. Modern digital mapping combines geophysical and surveying methods with magnetic detection and shape reconstruction to distinguish between UXO that must be excavated and metal debris that presents no hazard if left buried.

To certify the capabilities of the many existing geophysical survey vendors, the



ATC, DAGCAP accreditation body and vendor personnel.

DOD Advanced Geophysical Classification Accreditation Program, known as DAGCAP, was established. DAGCAP accreditation ensures that these vendors are capable of achieving contracted data quality objectives when investigating current and former military off-limit/restricted (i.e., "dudged") areas.



A vendor performs geophysical survey operations.

The U.S. Army Corps of Engineers is the lead organization administering DAGCAP. ATC supports DAGCAP at its UXO Test Site. The site was established to accommodate the research and development of geophysical UXO detection technologies, and the accreditation of the companies providing geophysical survey services to the DOD.

ATC assists the vendor demonstration and scoring phase of the accreditation process by providing access to the UXO Test Site, observing procedures for DAGCAP Standard Operating

Procedure compliance and scoring the vendor survey results.

Scoring is performed immediately after the vendor field demonstration survey data are ready. The results are provided to the DAGCAP accreditation body representative before the vendor departs the UXO Test Site. Each year, approximately 12 vendors are expected to seek accreditation. So far, six have performed demonstrations at the site.



Different terrain are represented at the Test Site.

In locating UXO, saving time and money is a plus, but such considerations can never outweigh the imperative for highly capable services that produce quality data. Accreditation evaluates qualifications, experience, capabilities, quality control, accountability and more to ensure the best resources. ATC is proud to support DAGCAP accreditation of geophysical survey services for the DOD.

CULMINATING, From page 1

Our cover story in this issue focuses on the transition to the Joint Light Tactical Vehicle (JLTV). This is currently one of the biggest projects within the U.S. Army Test and Evaluation Command (ATEC), and the most visible within the Army. Just as the Army is transitioning from one generation of vehicles to the next, ATC is transitioning as well. For the past 100 years, ATC has been one of our nation's most important players in the acquisition of military equipment used throughout the military services. We are building upon our previous experiences and ensuring that we posture the Army for success. What we accomplish daily allows the Army to advance in the realm of technology and firepower necessary to win decisively against those who wish to do us harm.

As we move to the next phase in ATC's history, we are undertaking numerous capability changes. We are heading in new directions, testing autonomous systems, driverless cars and more, in both the military and civilian sectors. Vehicles or aircrafts that operate autonomously pose a huge challenge to technology and safety, and we must ensure that these systems operate within the bounds of their designs. Our role in moving this technology forward lies in working with the Department of Transportation and other Government agencies as we test these platforms to better understand their performance and design.

Another critical transition occurring is the development of our cyber test capabilities. The emergence of APG as a proposed location for a National Cyber Range places us at the center of arguably two of the most critical challenges we face. These two areas will ensure ATC and the Army's five other locations will continue to shape acquisition development and testing.

As we build and sustain our test capabilities, we are also focused on sustaining a high level of readiness as a priority of the Chief of

Staff of the Army (CSA). We posture ourselves by improving and maintaining existing capabilities to include an improved rail system for our average of 51 rail impact tests per year, with each test supporting rail transport certification for Army equipment; the modernization (hangar and runway) of our airfield, which is used for fixed and rotary wing aircraft; the upgrade of our 60-year-old cannon tube and proofing facility; and the "re-skinning" our Mobile Target Simulator, which saves us millions in ammunition costs through its virtual modeling and simulation environment.

Finally, we have been awarded military construction funding to replace our 100-year-old fabrication facility. It is the oldest on Post, used to support every war since WWI. This facility has served us well, but to meet the challenges for the next 100 years, we welcome the increased capabilities that will ensure the Army's high readiness posture as outlined by the CSA.

We are also extending our independent testing influence with agencies outside of the DOD footprint, including the Departments of Transportation and Homeland Security, while also working closely with private industry. We continue to face many of the same challenges of the past: personnel attrition, attainment of the right skill sets, improved and increased technical and developmental training opportunities, and budgetary uncertainty. Our current path places us in a great position to meet these challenges.

The success of ATC since WWI has been due to its people, and the next 100 years will be no different. You are the cornerstone of what makes our Army great, and what allows our fighting forces to enter conflict with confidence that the equipment they shoot, move and use to communicate will sustain them. As I said at our annual State of Command, everyone here at ATC is taking part in forging a new path into the future for both the test center and the U.S. Army!

Great work by everyone! On to the next 100 years!

HISTORY, from page 12

these tests, with 60 drivers and supervisors collecting data for the engineers on trucks, truck tractors, trailers, cargo carriers, jeeps and tanks. Later that year, D&PS re-formed into the Materiel Testing Directorate (MTD), whose mission was to support Army arsenals and commodity commands by performing engineering and production tests on Army ordnance and testing all types of materiel as assigned by the freshly organized Test and Evaluation Command (TECOM). MTD was arranged into four branches: Operations, Supply, Engineering Services and Engineering Measurements/Analysis.

MTD was staffed by 1,354 people; 1,200 of whom were civilian scientists, engineers and support personnel, revealing the trend of a decreasing military presence on APG. One of the most important projects at MTD was Automatic Data Acquisition and Processing Techniques (ADAPT), encompassing the change from analog to digital data recording. ATC was the first test center in the U.S. military to implement this difficult change. Testing became increasingly efficient as data that previously took weeks to analyze was compiled in one day. ADAPT allowed engineers to receive real-time automotive and artillery test data during testing at multiple test sites. The analog system was less forgiving and did not naturally comply with computing. Digital required a completely different way of thinking and measuring, which was difficult for many engineers who were educated in and experienced with analog.

During the mid-1970s at MTD, the Main Battle Tank and what was to be the Bradley Fighting Vehicle began their long history of testing. The Jeep, used exclusively in WWII, the Korean War and into the Vietnam War, was replaced by the High-Mobility Multi-purpose Wheeled Vehicle (HMMWV), a new and more powerful type of transport. By the mid-1980s, the HMMWV had become one of the principle transports of the U.S. Army, with more than 17 variations.

Continued next issue

JLTV, From page 1

proved to fulfill the U.S. military's need for a versatile, mobile, fast, reliable, durable and transportable light vehicle in a tactical field environment. The end of the Humvee's production cycle became apparent, however, during U.S. military involvement in Iraq and Afghanistan in the early to mid-2000s, when Humvee capabilities were compromised. ATC is actively involved in the future of the next light tactical vehicle, as testing of the low rate initial production phase of the military's latest wheeled vehicle, the Joint Light Tactical Vehicle (JLTV), is in full throttle.

A joint program between the U.S. Army and the U.S. Marine Corps, the JLTV will exceed the original Humvee mobility and payload capabilities; maintain land, air and sea transportability; and elevate protection levels by using advanced integrated designs proven to increase survivability from outside threats, including protection from underbody blasts. The JLTV demonstrates the technical advancements made over the last 70 years by the U.S. military and private industry in

automotive subsystems, significantly improving tactical vehicle performance and mobility. With current U.S. military requirements far beyond those of conventional warfare legacy tactical vehicles designed to transport troops and cargo, the JLTV has two variants with base platforms that can be configured into multiple military mission packages, including the Utility, General Purpose, Close Combat Weapons Carrier, and Heavy Guns Carrier vehicles, giving the JLTV the versatility to function in various environments by using technologically advanced weapon, communication, power, navigation and situational awareness systems.

ATC is involved in all phases of JLTV testing across multiple commodity areas, including performance, reliability, transportability, survivability,



A JLTV performs a high-speed turning maneuver during a steering and handling test at the Automotive Technology Evaluation Facility at ATC.

communication and operational effectiveness and suitability. The technological evolution of the four-wheeled light tactical vehicle, from the Jeep to the JLTV, runs parallel with the growth of ATC's capabilities. With the Centennial anniversary of APG upon us, ATC is proud to support the U.S. Warfighter by providing the best test capabilities for the latest advancement in light tactical vehicles, the JLTV.

DIVE, From page 2

disposal (EOD) technicians and other qualified divers to assist the FBI with underwater post-blast event and crime scene investigations worldwide. On land, a post-blast investigation comprises the tactical analysis of a scene to determine how an incident was planned and executed (tactical characterization), and the methodical collection, preservation, and initial exploitation and analysis of materials recovered from the scene. Underwater Post Blast is the same investigation performed in a real-world maritime environment.

Course participants trained in a realistic, but controlled, environment. Before participants arrived on-site, underwater static detonations were performed using simulated improvised explosive devices (IEDs) and underwater mines. Instructors provided scenarios, including videos and simulated eyewitness accounts, and participants collected,



ATC's DLO Bill Mullis (right) accompanies Navy divers during a pre-dive safety brief at UTF.

preserved, documented and analyzed all material recovered. So far, the Post Blast course has been held four times at ATC. It now runs twice a year and is part of pre-deployment training for EOD detachments. Subject matter experts from the FBI, USN, ATC and other Government agencies are on-site to provide briefings and hands-on training.

ATC fulfills its vision each day by performing leading-edge test methodologies and comprehensive real-world training. Through its unique capabilities, ATC sets the highest possible standard of excellence in ensuring the safety and success of our military personnel on land, in the air, and underwater.

100 Years of Excellence: The ATC Story, Part 6



Excerpted from an article by Lauren Nelson

Tensions continued to rise during the Cold War, soon demonstrated through the growing conflict in Vietnam. Testing at Development and Proof Services (D&PS) remained at a high pace throughout the late 1950s and early 1960s.

To accommodate the ever widening scope of the D&PS mission in the early 1960s, testing was split in three directions: Engineer Design Testing, dominated by physical measurements and observations; Engineering Testing, providing basic test data for new items and searching for serious design flaws; Quality Assurance Testing, covering all of the work after the item was accepted as standard. The latter comprised about 50 percent of the



The Army tested the Plenum Air Tread Amphibious Vehicle (PATA) in the river and bay areas surrounding APG during the Vietnam War era. It was never fielded.

D&PS proof work.

D&PS also took on a crucial secondary mission covering development of proving ground instrumentation and test



NASA's "Mobility Test Article" was one of several designs considered before a final Lunar Rover concept was approved.

techniques to support the primary mission of developing and testing munitions. With the expansion of the test mission, D&PS extended a number of its facilities. Munson Test Course was enlarged in 1962 with the addition of 25 different test courses. New additions included slopes up to 60 percent, with side slopes of 40 percent. Roads from all over the world were reconstructed at Munson to give vehicles the most full-bodied test possible (e.g., Belgian block roads from northwest Europe and a road in the Asiatic Burma style). Other roads tested vehicle vibration response and frame and suspension clearances. Uniform and staggered bump courses, hard-surfaced simulations of shell holes, controlled bridging devices, and hard surfaces and gravel surfaces were included for endurance testing.

Specially prepared mud and clay areas and a marshy section also became available for limited soft soil testing. These areas are still in use today.

In 1966, facilities increased in preparation for proof work on two lunar surface mobility research vehicles, or "mobility test articles." These tests were conducted in cooperation with the National Aeronautics and Space Administration (NASA). Later, these tests moved to Yuma Proving Ground in Arizona.

In 1967, as the Vietnam conflict drew closer to a climax, APG celebrated its 50th anniversary. Forty firing ranges were used to test small arms, mortars, artillery, mines, rockets, bombs and armor plate; 29 courses were used for automotive testing with conditions of mud, gravel, slopes, rough road, bumps and amphibious landings. The airfield was used to test bombs, rockets, fuzes, anti-aircraft systems and pyrotechnics. Eight laboratories were equipped with instrumentation to provide for research and development. Over 50 years of development and proof testing had built a humble proof department into a flourishing organization.

With the Vietnam buildup, automotive and artillery testing continued around-the-clock. At the end of its time in 1968, D&PS had performed 674 tests of automotive and artillery materiel on a budget of \$24,000,000. In February 1968, the Automotive Division set an astounding record of 96,417 accumulated test miles. Incredibly, that record was broken in March with 101,811 test miles. More than 90 vehicles of about 40 different types were involved in

See **HISTORY**, page 10



Commander
U.S. Army Aberdeen Test Center
400 Collieran Road
APG, MD 21005-5059
<http://www.atc.army.mil>

Commander: Colonel Morris L. Bodrick
Technical Director: Mr. John R. Wallace

The Point Position is published quarterly for the customers, guests and staff of Aberdeen Test Center.

Direct inquiries to: Command Staff Directorate, Management Support Division.

Phone: 410.278.4037

Views and opinions expressed herein are not necessarily those of the Department of the Army. Photographs in The Point Position are U.S. Army photos unless otherwise credited.

Thank you to everyone who contributed to this edition of The Point Position.